

## **REMARKS**

### **Summary**

Claims 1-6, 10-16 and 18 stand in this application. Claims 7-9 and 17 have been canceled without prejudice. Claims 1, 11 and 15 have been amended. No new matter has been added. Favorable reconsideration and allowance of the standing claims are respectfully requested

Although Applicant disagrees with the broad grounds of rejection set forth in the Office Action, Applicant has amended claims 1, 11 and 15 in order to facilitate prosecution on the merits. Support for the above amendments can be found in the specification at least at paragraphs [0039]-[0043].

### **35 U.S.C. § 103**

At page 2, paragraph 4 of the Office Action claims 1-3 and 9-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US 2005/0152314 to Sun et al. ("Sun") in view of WO 01/37474 to Andre ("Andre"). At page 4, paragraph 5 of the Office Action claims 4, 15, 16 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of Andre and further in view of US 2004/0125235 to Kim et al. ("Kim"). At page 6, paragraph 6 of the Office Action claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of Andre and further in view of US 2004/0142665 to Papathanasion ("Papathanasion"). At page 6, paragraph 7 of the Office Action claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Sun in view of Andre and further in view of US 6,757,272 to Abeta et al. ("Abeta").

Applicant respectfully traverses the rejections, and requests reconsideration and withdrawal of the obviousness rejections.

The Office Action has failed to meet its burden of establishing a *prima facie* case of obviousness. According to MPEP § 2143, three basic criteria must be met to establish a *prima facie* case of obviousness. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

As recited above, to form a *prima facie* case of obviousness under 35 U.S.C § 103(a) the cited references, when combined, must teach or suggest every element of the claim. See MPEP § 2143.03, for example. Applicant respectfully submits that the Office Action has not established a *prima facie* case of obviousness because the cited references, taken alone or in combination, fail to teach or suggest every element recited in claims 1-6, 10-16 and 18. Therefore claims 1-6, 10-16 and 18 define over the cited references whether taken alone or in combination. For example, claim 1 recites the following language, in relevant part:

an adaptive equalizer to equalize a received multicarrier symbol based on the averaged channel estimate and generate a replica of a transmitted symbol....

According to the Office Action, the missing language is disclosed by Sun at paragraphs [0155]-[0160]. Applicant respectfully disagrees.

Applicant respectfully submits that claim 1 defines over Sun. Applicant respectfully submits that Sun at the given cite, arguably, teaches techniques to detect a MIMO signal, including a Minimum Mean Square Error (MMSE) Decision Feedback Equalization (DFE) algorithm that computes nulling vectors and detects multiple data streams to generate a raw decision and perform a decision directed feedback channel estimation update. By way of contrast, the claimed subject matter teaches “an adaptive equalizer to equalize a received multicarrier symbol based on the averaged channel estimate and generate a replica of a transmitted symbol...” Applicant respectfully submits that this is different than the above recited teaching of Sun.

Applicant respectfully submits that he has been unable to locate any teaching in the cited portions of Sun directed to an adaptive equalizer to “generate a replica of a transmitted symbol” as recited in claim 1. Therefore, Applicant respectfully submits that Sun fails to disclose, teach or suggest the missing language. Applicant respectfully submits that he has also been unable to locate the missing language in Andre, Kim, Papathanasion and Abeta. Consequently, the cited references, whether taken alone or in combination, fail to disclose, teach or suggest every element recited in claim 1.

Furthermore, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. *See* MPEP § 2143.03, for example. Accordingly, removal of the obviousness rejection with respect to claim 1 is respectfully requested. Claims 2-6 and 10 also are non-obvious and patentable over the cited references, taken alone or in combination, at least on the basis of their dependency from

claim 1. Applicant, therefore, respectfully requests the removal of the obviousness rejection with respect to these dependent claims.

Claims 11, 15 and 18 recite features similar to those recited in claim 1. Therefore, Applicant respectfully submits that claims 11, 15 and 18 are not obvious and are patentable over the cited references for reasons analogous to those presented with respect to claim 1. Accordingly, Applicant respectfully requests removal of the obviousness rejections with respect to claims 11, 15 and 18. Furthermore, Applicant respectfully requests withdrawal of the obviousness rejections with respect to claims 12-14 and 16 that depend from claims 11 and 15 respectively, and therefore contain additional features that further distinguish these claims from the cited references.

For at least the reasons given above, claims 1-6, 10-16 and 18 are non-obvious and represent patentable subject matter in view of the cited references, whether taken alone or in combination. Accordingly, removal of the obviousness rejection with respect to claims 1-6, 10-16 and 18 is respectfully requested. Further, Applicant submits that the above-recited novel features provide new and unexpected results not recognized by the cited references. Accordingly, Applicant submits that the claims are not anticipated nor rendered obvious in view of the cited references.

Applicant does not otherwise concede, however, the correctness of the Office Action's rejection with respect to any of the dependent claims discussed above. Accordingly, Applicant hereby reserves the right to make additional arguments as may be necessary to further distinguish the dependent claims from the cited references, taken alone or in combination, based on additional features contained in the dependent claims that were not discussed above. A detailed discussion of these differences is believed to

be unnecessary at this time in view of the basic differences in the independent claims pointed out above.

It is believed that claims 1-6, 10-16 and 18 are in allowable form. Accordingly, a timely Notice of Allowance to this effect is earnestly solicited.

The Examiner is invited to contact the undersigned at 724-933-9338 to discuss any matter concerning this application.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. § 1.16 or § 1.17 to deposit account 50-4238.

Respectfully submitted,

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John F. Kacvinsky, Reg. No. 40,040  
Under 37 CFR 1.34(a)

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